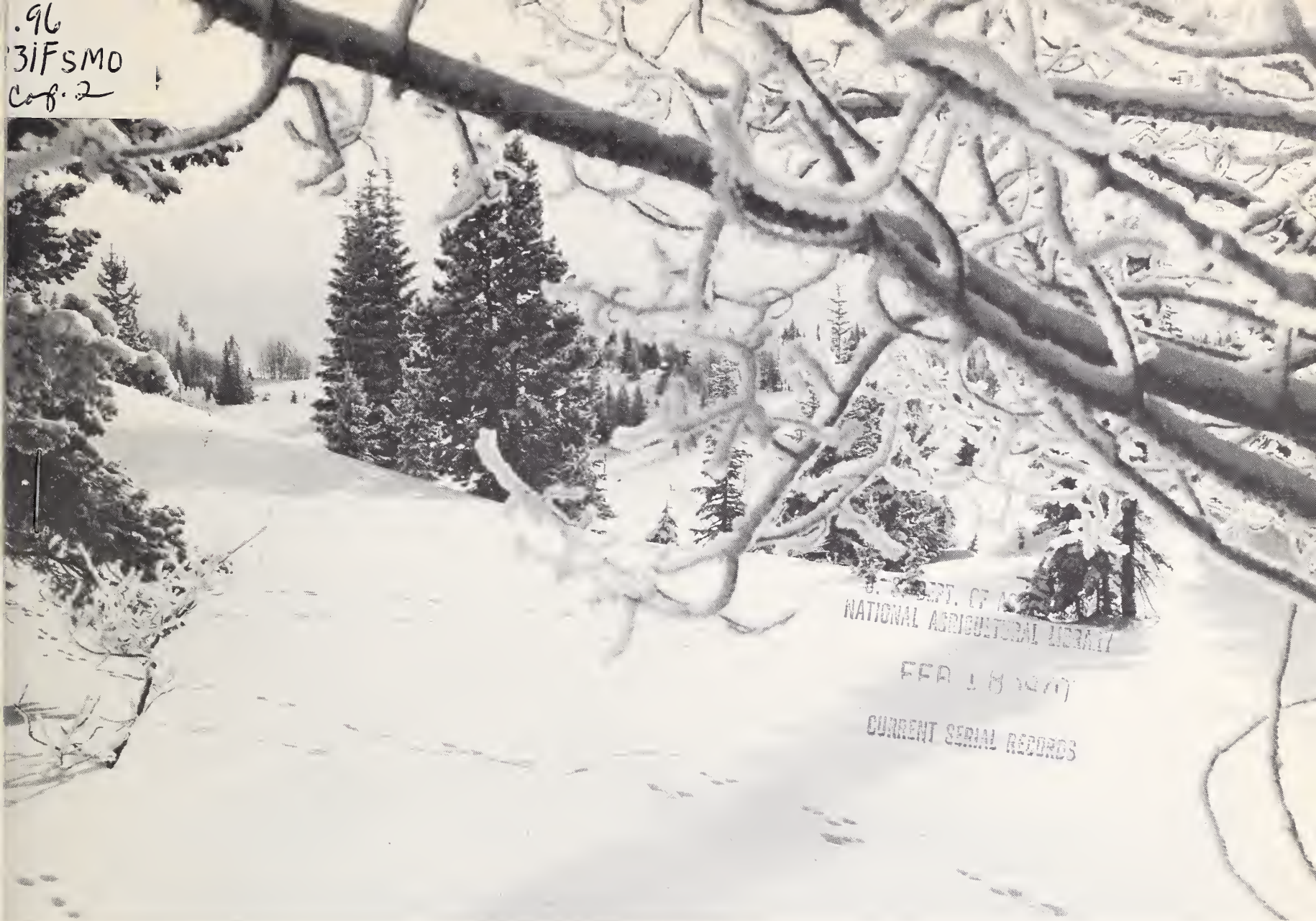


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WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,

and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
FEB. 1, 1970

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES .

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

|||||
Released by

A. B. LINFORD

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
Bozeman, Montana

In Cooperation with

J. A. ASLESON

DIRECTOR
Montana Agricultural Experiment Station

|||||
Report prepared by

P. E. FARNES, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
P.O. Box 98
Bozeman, Montana 59715

MONTANA WATER SUPPLY OUTLOOK

February 1, 1970

* * * * *

* Above average snowfall during January improved the
* mountain snowpack to near average over most of the
* State.
*

* Snowpack in the Kootenai River drainage is well
* below average. The Gallatin River drainage snow-
* pack remains well above average.
*

* Mountain soil moisture is generally below average
* with the exception of the lower Gallatin drainage.
*

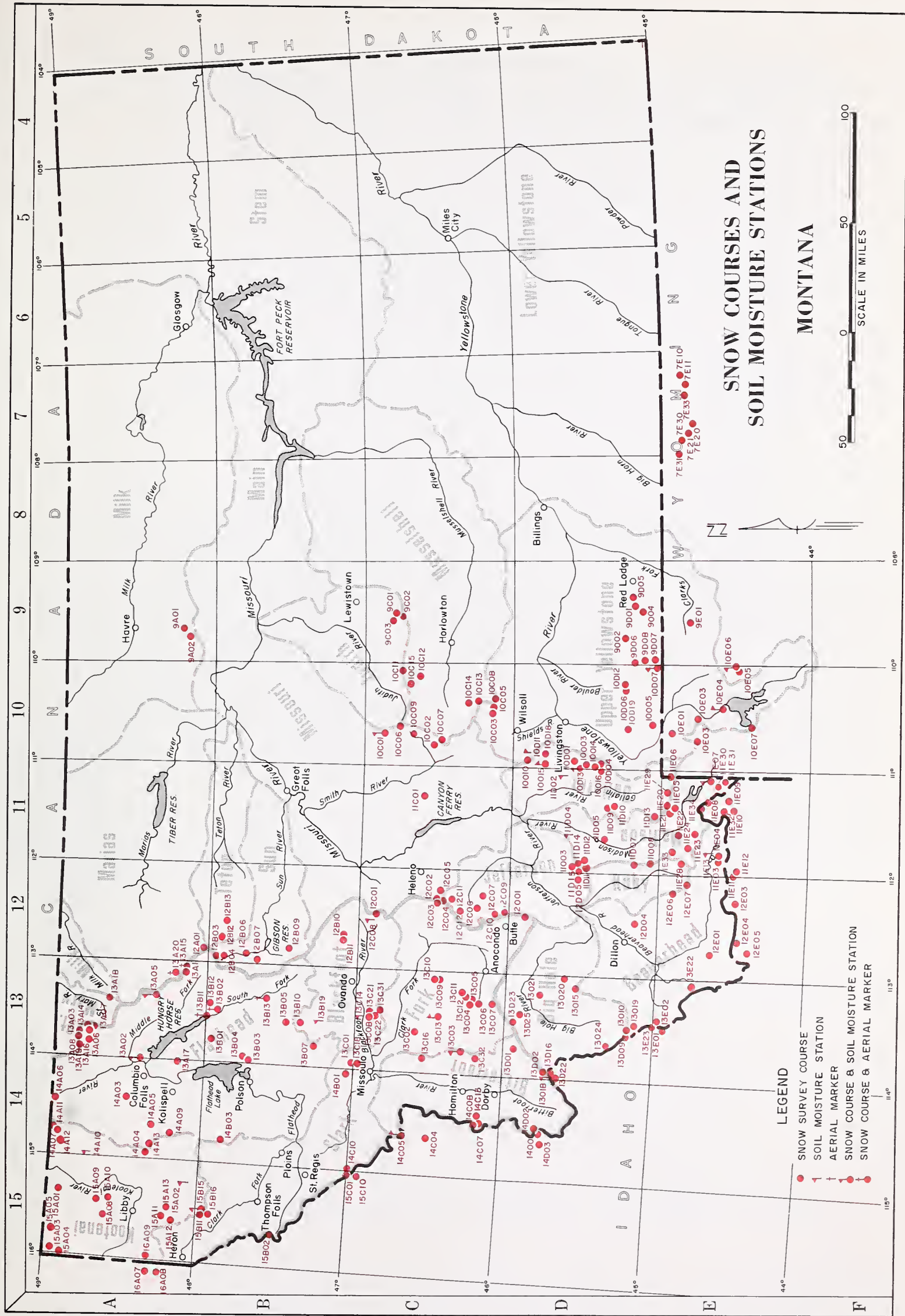
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COLUMBIA RIVER DRAINAGE

Snow - The low elevation snowpack is generally below average. The high elevation snowpack is near or above average. Snow cover in the Kootenai drainage is about two-thirds average; the Flathead is a little below average; the Clark Fork is near average and the Bitterroot is a little above average.

All snow courses will be measured about March 1 and the distribution of snowpack by drainages and elevation will be analyzed to a fuller extent.

Streamflow - Present conditions indicate that streamflow during the spring and summer will be between 80 and 90 percent average on major streams.



INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

Drainage Basin
& Course Name

Number

Elev., Sec., Twp., Range

Record
Begin

Measuring
Dates

Notes
By

COLUMBIA RIVER BASIN

KOOTENAI RIVER

14001	5700	4	27N	31E	1969	3,4,5,5,5,6	1
14002	5600	4	28N	30W	1969	2,3,4,5,5,6	1
14003	5500	36	28N	30W	1969	3,4,5,5,5,6	2
14004	5400	36	28N	30W	1969	3,4,5,5,5,6	2
14005	5300	36	28N	30W	1969	3,4,5,5,5,6	2
14006	5200	36	28N	30W	1969	3,4,5,5,5,6	2
14007	5100	12	30N	29W	1937	3,4,5	1
14008	5000	12	30N	29W	1937	3,4,5	1
14009	4900	35	28N	31W	1969	2,3,4,5,5,6	1
14010	4800	35	28N	31W	1969	2,3,4,5,5,6	1
14011	4700	35	28N	31W	1969	2,3,4,5,5,6	1
14012	4600	35	28N	31W	1969	2,3,4,5,5,6	1
14013	4500	18	37N	32W	1937	3,4,5,5,5,6	1
14014	4400	18	37N	32W	1937	3,4,5,5,5,6	1
14015	4300	35	30N	35W	1969	3,4,5	1
14016	4200	35	30N	35W	1969	3,4,5	1
14017	4100	3	28N	31W	1969	2,3,4,5,5,6	1
14018	4000	3	28N	31W	1969	2,3,4,5,5,6	1
14019	3900	3	28N	31W	1969	2,3,4,5,5,6	1
14020	3800	3	28N	31W	1969	2,3,4,5,5,6	1
14021	3700	3	28N	31W	1969	2,3,4,5,5,6	1
14022	3600	3	28N	31W	1969	2,3,4,5,5,6	1
14023	3500	3	28N	31W	1969	2,3,4,5,5,6	1
14024	3400	3	28N	31W	1969	2,3,4,5,5,6	1
14025	3300	3	28N	31W	1969	2,3,4,5,5,6	1
14026	3200	3	28N	31W	1969	2,3,4,5,5,6	1
14027	3100	3	28N	31W	1969	2,3,4,5,5,6	1
14028	3000	3	28N	31W	1969	2,3,4,5,5,6	1
14029	2900	3	28N	31W	1969	2,3,4,5,5,6	1
14030	2800	3	28N	31W	1969	2,3,4,5,5,6	1
14031	2700	3	28N	31W	1969	2,3,4,5,5,6	1
14032	2600	3	28N	31W	1969	2,3,4,5,5,6	1
14033	2500	3	28N	31W	1969	2,3,4,5,5,6	1
14034	2400	3	28N	31W	1969	2,3,4,5,5,6	1
14035	2300	3	28N	31W	1969	2,3,4,5,5,6	1
14036	2200	3	28N	31W	1969	2,3,4,5,5,6	1
14037	2100	3	28N	31W	1969	2,3,4,5,5,6	1
14038	2000	3	28N	31W	1969	2,3,4,5,5,6	1
14039	1900	3	28N	31W	1969	2,3,4,5,5,6	1
14040	1800	3	28N	31W	1969	2,3,4,5,5,6	1
14041	1700	3	28N	31W	1969	2,3,4,5,5,6	1
14042	1600	3	28N	31W	1969	2,3,4,5,5,6	1
14043	1500	3	28N	31W	1969	2,3,4,5,5,6	1
14044	1400	3	28N	31W	1969	2,3,4,5,5,6	1
14045	1300	3	28N	31W	1969	2,3,4,5,5,6	1
14046	1200	3	28N	31W	1969	2,3,4,5,5,6	1
14047	1100	3	28N	31W	1969	2,3,4,5,5,6	1
14048	1000	3	28N	31W	1969	2,3,4,5,5,6	1
14049	900	3	28N	31W	1969	2,3,4,5,5,6	1
14050	800	3	28N	31W	1969	2,3,4,5,5,6	1
14051	700	3	28N	31W	1969	2,3,4,5,5,6	1
14052	600	3	28N	31W	1969	2,3,4,5,5,6	1
14053	500	3	28N	31W	1969	2,3,4,5,5,6	1
14054	400	3	28N	31W	1969	2,3,4,5,5,6	1
14055	300	3	28N	31W	1969	2,3,4,5,5,6	1
14056	200	3	28N	31W	1969	2,3,4,5,5,6	1
14057	100	3	28N	31W	1969	2,3,4,5,5,6	1
14058	0	3	28N	31W	1969	2,3,4,5,5,6	1

FLATHEAD RIVER

14059	5150	11	24N	25W	1961	3,4,5	1,5
14060	5000	31	28N	11W	1964	3,4,5	1
14061	4900	31	28N	11W	1964	3,4,5	1
14062	4800	31	28N	11W	1964	3,4,5	1
14063	4700	31	28N	11W	1964	3,4,5	1
14064	4600	26	28N	18W	1961	3,4,5	6
14065	4500	26	28N	18W	1961	3,4,5	6
14066	4400	26	28N	18W	1961	3,4,5	6
14067	4300	26	28N	18W	1961	3,4,5	6
14068	4200	26	28N	18W	1961	3,4,5	6
14069	4100	12	35N	18W	1968	3,4,5	1,5
14070	4000	12	35N	18W	1968	3,4,5	1,5
14071	3900	35	28N	25W	1964	3,4,5	1,5
14072	3800	35	28N	25W	1964	3,4,5	1,5
14073	3700	35	28N	25W	1964	3,4,5	1,5
14074	3600	35	28N	25W	1964	3,4,5	1,5
14075	3500	35	28N	25W	1964	3,4,5	1,5
14076	3400	35	28N	25W	1964	3,4,5	1,5
14077	3300	35	28N	25W	1964	3,4,5	1,5
14078	3200	35	28N	25W	1964	3,4,5	1,5
14079	3100	35	28N	25W	1964	3,4,5	1,5
14080	3000	35	28N	25W	1964	3,4,5	1,5
14081	2900	35	28N	25W	1964	3,4,5	1,5
14082	2800	35	28N	25W	1964	3,4,5	1,5
14083	2700	35	28N	25W	1964	3,4,5	1,5
14084	2600	35	28N	25W	1964	3,4,5	1,5
14085	2500	35	28N	25W	1964	3,4,5	1,5
14086	2400	35	28N	25W	1964	3,4,5	1,5
14087	2300	35	28N	25W	1964	3,4,5	1,5
14088	2200	35	28N	25W	1964	3,4,5	1,5
14089	2100	35	28N	25W	1964	3,4,5	1,5
14090	2000	35	28N	25W	1964	3,4,5	1,5
14091	1900	35	28N	25W	1964	3,4,5	1,5
14092	1800	35	28N	25W	1964	3,4,5	1,5
14093	1700	35	28N	25W	1964	3,4,5	1,5
14094	1600	35	28N	25W	1964	3,4,5	1,5
14095	1500	35	28N	25W	1964	3,4,5	1,5
14096	1400	35	28N	25W	1964	3,4,5	1,5
14097	1300	35	28N	25W	1964	3,4,5	1,5
14098	1200	35	28N	25W	1964	3,4,5	1,5
14099	1100	35	28N	25W	1964	3,4,5	1,5
14100	1000	35	28N	25W	1964	3,4,5	1,5
14101	900	35	28N	25W	1964	3,4,5	1,5
14102	800	35	28N	25W	1964	3,4,5	1,5
14103	700	35	28N	25W	1964	3,4,5	1,5
14104	600	35	28N	25W	1964	3,4,5	1,5
14105	500	35	28N	25W	1964	3,4,5	1,5
14106	400	35	28N	25W	1964	3,4,5	1,5
14107	300	35	28N	25W	1964	3,4,5	1,5
14108	200	35	28N	25W	1964	3,4,5	1,5
14109	100	35	28N	25W	1964	3,4,5	1,5
14110	0	35	28N	25W	1964	3,4,5	1,5

CLARK FORK RIVER

Copper Cree	12810	5700	1	15N	9W	1962	3,4,5	1
Wooter Mine	12811	6250	2	15N	9W	1962	3,4,5	1
Coyote Hill	13810	4200	12	18N	16W	1947	1,2,3,4,5	1,2
El Dorado Mine	13809	7800	23	8N	12W	1949	3,4	1
Red Butte Pass	13210	9900	12	8N	13W	1928	3,4,5	1
North Ledge	13211	9600	12	8N	13W	1928	3,4,5	1
Neart Ledge Trail	14C10	4800	1	16S	27W	1965	1,2,3,4,5	1,2
Hoodoo Basin	15C10	6900	17	16N	27W	1967	1,2,3,4,5,5,6	1,2
Hoodoo Creek	15C01	5900	16	14N	27W	1937	1,2,3,4,5	1,2
Innargard	15C04	6450	6	5N	13W	1936	2,3,4,5	4,2
Lubrecht Forest No. 3	13C21	5450	19	13N	14W	1951	1,2,3,4,5	8
Lubrecht Forest No. 4	13C22	-650	23	13N	15W	1951	1,2,3,4,5	8
Lubrecht Forest No. 6	13C08	4040	11	13N	15W	1951	1,2,3,4,5	8
N. Park Elk Creek	13C31	6250	20	13N	13W	1968	1,2,3,4,5,5,6	1
Red Lion	13C12	7100	22	6N	13W	1958	3,4,5	1
Slickhoo Summit	13C03	7260	30	6N	17W	1937	3,4,5	1
Slide Rock Mountain	13C02	7100	35	10N	16W	1937	3,4,5	1
Southern Cross	13C05	8500	8	5N	13W	1936	2,3,4,5	1
Spring Gulch	13C18	9000	12	14N	19W	1961	1,2,3,4,5	8
Scott Mill	13C19	8500	16	14N	19W	1956	1,2,3,4,5	8
Stuart Mill	13C06	6590	1	4N	13W	1936	1,2,3,4,5	8
Stuart Mountain	13C01	7400	6	14N	18W	1936	1,2,3,4,5	8
T.V. Mountain	14B01	6800	33	15N	19W	1956	1,2,3,4,5,5,6,6	8

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
KOOTENAI	7	60	62
FLATHEAD	6	60	82
CLARK FORK	9	66	94
BITTERROOT	2	78	111
JEFFERSON	7	49	94
MADISON	12	71	107
GALLATIN	12	122	154
MISSOURI MAIN STEM	4	46	80
YELLOWSTONE	5	78	99

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
					Last Year	Average
NAME	Elevation					

COLUMBIA RIVER BASIN

KOOTENAI RIVER

Fernie	3500				11.8	7.1
Field	4200	1/29	18	3.2	4.7	5.5
Glacier	4100	1/27	56	14.3	19.7	20.5
Gray Creek	5100	1/30	32	7.0	12.6	12.4
Kicking Horse	5400	1/29	34	7.0	10.5	11.4
Marble Canyon	5000	1/29	30	5.1	11.3	10.6
Morrissey Ridge	6100	1/30	53	12.7	-	20.0
New Fernie	4100				-	11.1
Sinclair Pass	4500	1/29	17	2.9	5.5	4.7
Sullivan Mine	5100	1/29	30	6.6	14.2	9.7

FLATHEAD RIVER

Desert Mountain	5600	1/30	36	8.9	15.9	10.7
Hell Roaring Divide	5770	1/30	63	13.9	28.1	22.3
Holbrook	4530	2/5	35	7.0A	11.0A	7.4
Marias Pass	5250	1/28	48	10.2	14.0	12.1
Spotted Bear Mountain	7000	2/5	49	10.0A	14.0A	10.1
Twin Creeks	3580	2/5	42	8.5A	14.0A	8.7

CLARK FORK RIVER

Black Pine	7100	1/30	31	7.8	13.6	8.8
Black Pine Pillow	7100	1/30	SP	7.9	13.0	8.8
Combination	5600	1/30	13	2.9	-	-
Coyote Hill	4200	1/30	34	7.8	10.1	7.8
Heart Lake Trail	4800	1/29	52	12.8	20.4	-
Hoodoo Basin	6000	1/29	118	33.1	44.7	-
Hoodoo Basin Pillow	6000	2/01	SP	32.6	-	-
Hoodoo Creek	5900	1/29	116	31.8	41.8	32.0
Intergaard	6450	2/03	22	3.9	7.1	5.3
Lookout	5250	2/01	88	24.5	38.7	25.0
Lubrecht Forest No. 3	5450	1/28	20	4.7	-	5.2
Lubrecht Forest No. 4	4650	No Survey			-	2.7
Lubrecht Forest No. 6	4040	1/28	14	3.4	-	3.3
North Fork Elk Creek Pillow	6500				-	-
Southern Cross	6500	2/03	15	2.9	6.5	4.4
Storm Lake	7780	1/29	38	8.6	12.0	8.5
Stuart Mill	6500	2/03	17	3.2	6.8	4.5
Stuart Mountain	7400	No Survey			-	21.5
TV Mountain	6800	1/29	55	13.6	-	11.8

A - Aerial observation - water content estimated.

SP - Snow pillow observation - water content only.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average

BITTERROOT RIVER

Gibbons Pass	7100	1/30	60	15.1	22.0	15.1
Lolo Pass	5230	1/29	80	20.5	25.6	-
Moose Creek	6200	1/30	48	13.8	15.2	10.9
Saddle Mountain	7940	1/30	65	17.2	25.1	-
Saddle Mountain Pillow	7900	1/30	SP	17.8	26.9	-
Savage Pass	6600	1/30	62	15.8	23.3	-
Twelvemile Creek	5600	2/03	68	16.6	18.9	-
Twelvemile Creek Pillow	5600				16.4	-

SP - Snow pillow observation - water content only.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average

MISSOURI RIVER BASIN

BEAVERHEAD RIVER

Camp Creek	6800	1/28	25	6.2	14.5	6.3
Carter Creek	7400	1/31	20	4.2	4.2	2.8
Kilgore	6200	1/28	36	9.8	14.8	6.2
Lakeview Canyon	6930	1/30	22	5.6	18.4	8.3
Lakeview Ridge	7400	1/30	21	5.5	15.5	7.7
Sawtelle Mountain	8715	1/28	80	23.8	41.5	-

JEFFERSON RIVER

Copper Mountain	7700	2/02	27	6.1	8.8	-
Nez Perce Creek	6500	2/02	16	3.3	6.1	-
Picnic Grounds	6500	2/03	12	2.3	4.6	3.1
Pipestone Pass	7200	1/28	10	2.5	5.3	3.4
Rocker Peak	8000	2/02	39	10.0	13.8	-
Rocker Peak Pillow	8000	2/02	SP	9.8	13.1	-
Uncle Sam Gulch	6500	2/02	23	4.7	8.7	-

MADISON RIVER

Big Springs	6500	1/28	62	16.3	21.3	13.1
Black Canyon	7850	1/29	82	22.8	30.4	23.1
Black Moose	8125	1/29	97	27.8	39.0	26.8
Hebgen Dam	6550	2/03	37	9.1	11.6	7.5
Island Park	6315	1/28	54	12.6	19.4	10.6
Lake Creek	6100	1/29	26	5.4	8.6	-
Latham Springs	7650	1/29	86	23.2	30.8	22.4
Lion Mountain	8760	1/26	56	12.8	22.2	-
Lucky Dog	6900	1/29	74	19.4	25.4	16.8
Meridian Creek	7000	1/29	28	5.8	13.5	-
Norris Basin	7500	2/04	36	7.9	8.6	7.2
Old Road	7250	1/29	80	21.6	28.0	17.5
Poachers Cabin	8000	1/29	79	23.2	29.8	23.8
Soap Bogus Divide	7600	1/30	43	9.5	16.2	-
Targhee Pass	7000	1/28	39	8.2	20.7	-
Tepee Creek	8000	1/29	46	11.0	20.0	-
Valley View	6500	1/28	40	8.6	22.4	10.3
West Yellowstone	6700	2/03	34	8.4	13.4	7.4
West Yellowstone Pillow	6700	1/29	SP	5.2	10.2	-

ST. MARY RIVER

Hudson Bay Divide	5800	1/28	35	8.6	-	-
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SP - Snow pillow observation - water content only.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
					Last Year	Average
NAME	Elevation					

GALLATIN RIVER

Arch Falls	7350	1/30	41	11.6	10.0	7.5
Bridger Bowl	7250	1/29	87	25.5	22.0	16.1
Bridger Bowl Pillow	7250	1/29	SP	24.3	21.1	15.6
Devils Slide	8100	1/30	66	19.6	15.8	13.2
Hood Meadow	6600	1/30	36	10.8	7.8	5.8
Hood Meadow (New)	6600	1/30	39	11.9	8.5	6.5
Lick Creek	6860	1/30	34	9.6	6.9	6.3
Lick Creek Pillow	6860	1/30	SP	8.3	6.2	5.7
Maynard Creek	6210	1/29	57	16.4	14.5	-
Maynard Creek Pillow	6210	1/29	SP	12.8	10.4	-
New World	6700	1/28	41	10.2	8.3	6.4
Shower Falls	8100	1/30	76	23.2	19.5	16.0
Shower Falls Pillow	8100	1/30	SP	19.8	17.6	14.1
Twenty-One Mile	7150	2/04	46	11.4	21.8	11.9

MISSOURI RIVER (Main Stem)

Bear Paw Ski Area	5200	1/30	27	6.4	4.8	-
Chessman Reservoir	6200	1/30	9	1.8	5.8	2.6
Rocky Boy	4700	1/30	20	3.4	3.9	-
Rocky Boy Pillow	4700	1/30	SP	3.3	3.0	-
Ten Mile Lower	6600	1/30	16	3.1	8.8	4.6
Ten Mile Middle	6800	1/29	25	5.4	11.2	6.9
Ten Mile Upper	8000	1/29	32	8.1	14.7	8.8

SUN-TETON-MARIAS RIVERS

Badger Pass	6900	2/05	101	25.0A	37.0A	-
Blue Lake	5900	2/05	57	12.5A	-	-

UPPER YELLOWSTONE

Canyon	7750				14.8	10.1
Grizzly Peak	8400	1/29	40	10.4	7.5	10.1
Lake Camp	7850				10.4	5.9
Lodgepole	8200	1/29	32	7.0	-	6.9
Lupine	7300				12.3	7.1
Northeast Entrance	7400	1/31	30	7.4	8.6	6.0
Northeast Entrance Pillow	7400				8.5	-
Sylvan Pass	7100	1/30	42	8.9	12.2	8.8
Thumb Divide	7900	2/01	55	12.3	23.0	14.6
West Rosebud	7500	1/28	25	5.3	10.0	-

A - Aerial observation - water content only.

SP - Snow pillow observation - water content only.

SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASIN

Kootenai

Baree Trail	3800	48	7.5	No Measurement	-		
Murphy Lake R.S.	3000	48	22.6	2/02	19.3	19.0	19.6
Raven R.S.	3050	48	23.0				-

Flathead

Desert Mountain	5600	54	8.4	1/30	6.4	8.7	7.1
Marias Pass	5250	54	6.5	1/29	4.6	5.4	5.1

Clark Fork

Black Pine	7100	48	10.0	1/30	7.2	8.7	7.4
Seeley Lake R.S.	4030	48	11.9	1/30	5.2	8.3	7.1
Skalkaho Summit	7260	48	10.8	No Measurement			-

Bitterroot

Gibbons Pass	7100	48	7.1	1/30	3.3	5.8	5.5
Lolo Pass	5250	48	10.6	2/05	5.1	6.5	6.6

MISSOURI RIVER BASIN

Beaverhead

Lakeview	6700	48	15.3	2/02	5.7	6.2	7.0
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Madison

West Yellowstone	6700	48	6.5	1/29	2.0	3.5	-
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Gallatin

Bridger Bowl	7250	48	17.0	1/29	16.7	16.6	15.8
College Site	4856	54	14.5	2/03	14.2	12.2	10.0
Lick Creek	6860	48	18.8	1/30	17.1	16.6	-
Twenty-One Mile	7150	48	10.0	1/29	6.5	6.9	3.5

Missouri Main Stem

Kings Hill	7420	48	11.8	1/30	6.3	7.4	7.2
Stemple Pass	6350	48	5.9	1/30	3.3	4.1	4.1

Milk

Beaver Creek	3950	48	20.9	1/30	9.4	-	-
Rocky Boy	4700	36	10.1	1/30	6.8	-	-

Yellowstone

Battle Ridge	6020	48	17.6	1/29	12.7	14.5	12.9
Northeast Entrance	7350	48	9.4			7.7	6.7

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average

COLUMBIA RIVER BASIN

Flathead	Hungry Horse	3,428.0	2,026.0	2,902.0	2,474.0
	Flathead Lake	1,791.0	1,067.0	1,184.0	1,186.0
	Camas (4)	45.2	18.1	14.3	26.6
	Mission Valley (8)	100.3	24.6	80.2	31.0
Clark Fork	Georgetown Lake	31.0	13.8	29.4	25.1
	Noxon Rapids	334.6	320.0	322.2	320.2
Bitterroot	Como	34.9	8.9	16.1	9.3
	Painted Rocks	31.7	21.0	29.4	21.7

MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	328.9	141.9	152.8	126.5
	Lima	84.0	50.6	44.9	22.8
Ruby	Ruby	38.8	29.7	27.8	21.1
Madison	Hebgen Lake	377.5	266.4	299.5	168.7
	Ennis Lake	41.0	34.8	35.4	38.4
Gallatin	Middle Creek	8.0	3.8	3.5	3.3
Missouri	Canyon Ferry	2,043.0	1,677.0	1,649.0	1,602.0
	Hauser & Helena	61.9	60.7	63.0	56.5
	Lake Helena	10.4	10.0	10.9	8.6
	Holter Lake	81.9	81.8	51.2	61.5
	Smith River	10.7	4.9	8.0	5.7
	Durand	7.0	3.2	6.1	4.0
	Martinsdale	23.1	4.8	10.6	6.3
	Deadman's Basin	72.2	28.3	46.6	42.2
	Fort Peck	19,410.0	16,340.0	16,210.0	10,930.0
	Gibson	105.0	16.7	61.9	47.0
Sun	Willow Creek	32.3	17.9	20.4	20.4
	Pishkun	32.0	17.4	17.2	17.9
	Lower Two Medicine	16.6	5.0	10.3	0.0
Marias	Four Horns	19.2	12.7	13.0	12.1
	Swift	30.0	15.5	21.5	17.8
	Lake Frances	112.0	82.6	79.5	83.3
	Tiber	1,347.0	538.4	450.2	625.5
	Fresno	127.2	69.7	86.8	59.6
Milk	Nelson	66.8	47.5	45.2	42.4
	Lake Sherburne	66.1	16.2	26.9	17.9
Yellowstone	Mystic Lake	20.8	8.5	12.0	10.4
	Tongue River	68.0	24.6	33.0	19.9
	Cooney	27.5	13.3	18.5	13.0
Big Horn	Yellowtail	1,356.0	693.2	731.8	723.0

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average

Average based on 1953-67 period.

Agencies and Organizations Cooperating in Montana Snow Surveys

U. S. Forest Service
Region I, Missoula, Montana
Montana Forests and Ranger
Districts

U. S. Geological Survey
Helena, Montana
Portland, Oregon

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Walla Walla, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana
Portland, Oregon
Kansas City, Missouri

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Bonneville Power Administration
Portland, Oregon

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

Montana Water Resources Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

Department of Energy, Mines and
Resources
Calgary, Alberta

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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with the Snow Survey"*